



December 14, 2016

## FRCSW Paints Its First MV-22 Osprey

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The MV-22 Osprey assigned to Marine Medium Tilt-rotor Squadron 161 (VMM-161) is pictured at the Fleet Readiness Center Southwest paint complex Nov. 19, 2016, during the aircraft's painting process. The aircraft requires hand/scuff sanding of its entire surface, which results in a "leopard" pattern appearance. U.S. Navy Photo

NAVAL AIR STATION NORTH ISLAND - All roads lead to the paint complex in Building 466, where Fleet Readiness Center Southwest (FRCSW) aircraft products are concerned.

Most recently, that road was traveled by the first MV-22 Osprey tilt-rotor aircraft to undergo painting at the command. The Osprey was inducted in November and flown from its Planned Maintenance Interval-2 (PMI-2) event that was completed at FRCSW Site Miramar.

This course of events was quite unique: FRCSW Site Miramar completed the PMI-2 earlier in the year, returning the aircraft to the Marines of Marine Medium Tilt-rotor Squadron 161 (VMM-161) for build-up and testing before flying it to FRCSW for final painting and weight/balance as part of the PMI-2 process.

Final paint at FRCSW is typically applied before the build-up and testing of the aircraft prior to delivery to the customer; however, adequate paint facilities and the proper certifications are not available at Site Miramar, and so, required a different flow of events.

Preparation for the MV-22 paint event began more than a year ago when two journeyman,



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crew leader David Powers and painter Charles Broadnax, traveled to FRC East (FRCE) at Cherry Point to receive training on the MV-22's strip and paint operations.

While FRCE's operations and facilities differ from those of FRCSW's, the team learned the unique differences and challenges involving the removal the aircraft's original coatings, preparing the surfaces for painting, and applying the new Type IV paint, including the required stenciling and markings.

Logistics preparations continued throughout the year with stakeholder meetings that included materials lab engineers; deputy IPT leads; production control; production managers; planning department; paint crew leaders and artisans; supervisors; financial; safety office; and business office personnel. These critical preparations ensured the right materials were ordered along with the appropriate source documentation, and solutions to concerns were tailored to successfully assist the paint complex.

As an airframe, the MV-22 is a unique configuration both in its body and its large nacelles and subsequently massive 38- foot propellers.

The propellers require appropriate masking for sanding, and then separately for paint operations to include rotation during the painting process. Planning when to rotate the propellers, as well as the stenciling/marketing of the areas, was critical due to the need to raise or lower the aircraft's struts to allow clearance in the dual-bay operation.

The V-22 fuselage and empennage are comprised of aluminum, carbon/epoxy composite, and carbon/epoxy composite overlaid with 5 thousandths-of-an-inch copper mesh. The wing and nacelles are comprised of carbon/epoxy composite and fiberglass.

This mix of substrate materials and subsequent treatments fell under the expertise of materials engineer Esther Chan. Her dedication was critical in the timely success of the project, as she became respirator-certified and suited up to provide the necessary guidance to the artisan team.

Pre-training on the copper mesh (Astro-Strike) and the new primer and Type IV paint were stepping stones to success for the paint complex. Powers and Chan developed a training regimen consisting of an eight-hour education and lab environment for the artisans.

Using donated aircraft surfaces from the composite shop so as not to damage the Astro-Strike surface, the artisans learned new sanding techniques with new sanding materials, as well as painting with the new Type IV paint.

After induction of the MV-22, artisans and materials lab engineers overcame their first objective: fitting the new fall protection stands to the airframe under the instruction of FRCSW safety specialist Javier Trujillo.



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FRCE crew leader James Kanuck and materials lab engineer Ryan Glembocki provided direct support and guidance to the FRCSW crew leaders and team members. The experience of the FRCE members translated directly to the paint artisans, reducing a potential 30-day estimated turn-around-time to a 14-day delivery from the paint complex to the weight/balance team.

The MV-22 paint process requires hand/scuff sanding of the entire surface of the airframe; and with such a large aircraft, the paint complex team needed to ensure enough members were trained. The aircraft was swarmed, creating a “leopard” pattern look on the airframe without sanding into the Astro-Strike.

Wiping the aircraft down following sanding, the artisans masked it for painting the tri-color paint scheme. The stenciling and marking of the aircraft with several hundred stencils of various sizes was another challenge, as well.

Since FRCE and FRCSW are the only FRCs to provide paint services to the fleet for this aircraft and with a growing population of MV-22s on the horizon that includes Navy models, it is anticipated that FRCSW will paint upwards of 15 units per year.

Currently, the paint complex is scheduled for three units in fiscal year 2017, with a goal to reduce the TAT through experience gained from this and future evolutions.

The success of FRCSW’s first MV-22 paint operation may be attributed to excellent logistics integration planning and good material sourcing. But success is also truly rooted within the people involved: the artisans, engineers, logisticians, P/Cs, QAs, and other members who take pride in their work, teaming together, determined to succeed for the fleet.

For FRCSW aircraft, all roads lead to paint: Taking the “Pain” out of Paint, leaving the “T” for on target delivery!